

Title (en)
PROCESS FOR PREPARING OPTICALLY ACTIVE 3-HYDROXYBUTANOIC ACID

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Application
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Abstract (en)
[origin: EP0369691A2] For preparing an optically active 3-hydroxybutanoic acid of formula: <CHEM> wherein R<1> represents a protective group of carboxylic acid, and R<2> represents hydrogen, C1-4 alkyl which may be substituted with halogen, C1-4 alkoxy or a phenyl or benzyloxy which may each be substituted with a C1-4 alkyl or alkoxy; a 3-oxobutanoic acid ester of formula: <CHEM> wherein R<1> and R<2> are as defined above, preferably in a halogenated hydrocarbon solvent under H₂ pressure of 10-150 kg/cm<2> at 15-100 DEG C for 10-40 hours, is asymmetrically hydrogenated in the presence as a catalyst of a ruthenium-optically active phosphine complex, preferably a 'BINAP' tertiary phosphine complex. The compound (I) can be used for synthesizing in 5 steps a 4-acetoxiazetidin-2-one derivative, a useful intermediate for obtaining penem antibiotics. The synthesis of (I) is carried out economically from (II) which is easily prepared from an aceto-acetic ester.

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